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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Tomoya Sugita

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EXAMINER

BROOKS, JERRY L.

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,928	Applicant(s) SUGITA ET AL.	
	Examiner JERRY BROOKS	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4 and 6-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4 and 6-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08/282006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (5, 632,546).

With respect to claim 1, Lee discloses a two-dimensional image forming apparatus comprising (fig.6): a light source (9); an image former (12) for forming a two-dimensional image by the light emitted from the light source (9); an enlarging projector (14, zoom lens) for enlarging and projecting the two-dimensional image formed by an image former; a switching part (mechanism that moves 9) for switching and selecting a path for light emitted from the light source (2), between a first path including both image former and the enlarging projector (14 and 5) and second light path that includes neither an image former nor an enlarging projector (second path does not include a modulator or a zoom lens), wherein the switching part leads the light emitted to the second light path outside of the two-dimensional image forming apparatus (light is led outside to transparent screen 17) , and the light led to the outside of the two-dimensional image forming apparatus is an illumination light source (implicitly

disclosed by the operation of figs.6 and 7).

With respect to claim 7, Lee discloses two-dimensional image forming apparatus as defined in Claim 1, wherein the second light path includes an enlarging optical system or a dispersion optical system (see 17 or 15), and the emitted light is projected toward the outside of the apparatus via the enlarging optical system or the dispersion optical system when light emitted from the light source is on the second light path (implicitly disclosed by the operation of fig.6 and 7).

Claims 9, 11 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Mazda (6,636,274).

With respect to claims 9, 11 and 17, Mazda discloses a two-dimensional image forming apparatus comprising (fig.8): a light source (1,2,3: wherein the light source is a laser light source); an image former (SLM, 7,8,9) for forming a two-dimensional image by the light emitted from the light source (1,2,3); an enlarging projector (11) for enlarging and projecting a two-dimensional image formed by the former (SLM, 7,8,9); a branching part (mirror 81) for branching a path for the light emitted from the light source (1,2,3) so that one part of the emitted light propagates on a first light path (see path from 1,2,3 to the lens) which includes both the image former and the enlarging projector, and a second part of

the emitted light propagates on a second light (see path from 81 to 131) path that includes neither an image former (path B only includes the enlarging projector) nor the enlarging projector wherein the branching part is between the image former and the enlarging projector (see fig.8; 81).

Claims 9, 10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Gyoten (6,422,704).

With respect to claims 9, 10 and 12, Mazda discloses a two-dimensional image forming apparatus comprising (fig.2): a light source (111); an image former(110,109,1089) for forming a two-dimensional image by the light emitted from the light source (111); an enlarging projector (101) for enlarging and projecting a two dimensional image formed by the former (110,109,1089); a branching part (mirror 112) for branching a path for the light emitted from the light source (111) so that one part of the emitted light propagates on a first light path (see path from 111 to 101) which includes both the image former and the enlarging projector, and a second part of the emitted light propagates on a second light (see path from 112 to 114) path that includes neither an image former nor the enlarging projector (second path only includes a collective lens) wherein the branching part is between the light source (see location of 113) and image former part and wherein the branching part is a half mirror (112).

Claims 18 are rejected under 35 U.S.C. 102(b) as being anticipated by

Dewald (6,587,159)

With respect to claim 18, Dewald discloses a two-dimensional image forming apparatus comprising (fig.2) : a light source (104); an image former (202) for forming a two-dimensional image by the light emitted from the light source (4); an enlarging projector (see 502 in fig.5) for enlarging and projecting the two- dimensional image formed by the image former (202); a switching part (206) for switching and selecting a path for the light emitted from the light source, between a first path (see optical axis in fig.2) including both the image former (implicitly disclose by the operation of 202) and the enlarging projector (502) and a second light path (the path on which 8 and 6 lie) which does not include at least one of the image former and the enlarging projector (see 500), wherein the light switching part is a moving mechanism for moving the enlarging projector between a position located on a light path of light emitted from the light source (104), and a position not located on that light path (see fig.5).

Claims 1, 7 and 8, 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Kwon (5,772,301).

With respect to claim 9, Uchiyama discloses a two-dimensional image forming apparatus comprising (fig.3): a light source (1); an image former (SLM, 8a and 8b) for forming a two-dimensional image by the light emitted from the light source (1); an enlarging projector (9) for enlarging and projecting a two- dimensional image formed by the former (SLM, 8a and 8b); a branching part (mirror 4 or mirror 5) for

branching a path for the light emitted from the light source (1) so that one part of the emitted light propagates on a first light path (A) which includes both the image former and the enlarging projector, and a second part of the emitted light propagates on a second light (B) path that includes neither an image former (path B only includes the enlarging projector) nor the enlarging projector.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (5, 632,546) in view Tatsuo (JP 08-62721 A).

With respect to claim 4, Lee discloses the two-dimensional image forming apparatus as defined in claim 1, but does not disclose the switching part is a rotation mechanism which rotates the light source so that the direction of light emitted from the light source is changed.

Tatsuo discloses a two-dimensional image forming apparatus comprising (see description of notations, fig.6 and fig.2): a light source (fig. 2, 18 and 19); a image former (14) for forming a two-dimensional image by the light emitted from the light source; an enlarging and projection (fig.6, 7b) part for enlarging and projecting the two-

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dimensional image formed by the two-dimensional image former (fig.2, 14); and teaches where in a path switching part (9) is a rotation mechanism which rotates the light source (the rotation of element 3, inherently rotates the light source) so that the direction of light emitted from the light source is changed (in fig. 6 the light path is changed from 6a to 6b).

It would be obvious at the time of invention to one of ordinary skill in the art to modify the light source and movement of Lee with the teaching of Tatsuo to rotate the light source (fig. 8,1) to efficiently change the direction of the light path.

Claims 6 is rejected under 35 U.S.C. 103(a) as being obvious over Lee (5, 632,546) in view of Uchiyama (5,851,060).

With respect to claim 6, Lee does not disclose the switching part includes: a mirror; and a mechanism for moving the mirror between a position in which the mirror reflects light emitted from the light source, which position is on a path of light emitted from the light source; and a position which is not located on a light path of light emitted from the light source.

Uchiyama discloses the two-dimensional image forming apparatus wherein the switching part (4) includes: a mirror (4); and a moving mechanism (col. 5, lines 6-20) for moving the mirror between a position (see fig.3 wherein number 1 is circled) at which the mirror (4) reflects light emitted from the light source (1), which position is on a light path of emitted from the light source (see fig.1 and fig.4 wherein number 1 is circled), and a position (see fig.3 wherein number 2 is circled) which is not

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located on the light path of light emitted from the light source (see fig.1 and fig.4 wherein number 2 is circled).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the switching mechanism of Lee with the teaching of Uchiyama to efficiently switch the light path.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being obvious over Lee (5, 632,546) in view of Weber (6,364,487).

With respect to 13, Lee discloses the two-dimensional image forming apparatus as defined in Claim 1, but does not disclose wherein the light source is an LED.

Weber discloses a two dimension image forming apparatus (co1.1, lines 20-26) wherein the light source is a Led (lines 23-24).

Weber further discloses that an LED is typically a "spectrally narrow band light source reduces the need for color filters (co1.1, lines 23-24)" which would reduce the size or cost of the device.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the device of Lee to use a LED as a light source as taught by Weber to reduce the cost or size of Lee's device.

With respect to 14, Lee discloses the two-dimensional image forming apparatus as defined in Claim 1, but does not disclose wherein the light, source is a laser.

Weber discloses a two dimension image forming apparatus (co1.1, lines 20-26) wherein the light source is a Laser (co1.1, lines 23-24). Weber further discloses that a

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laser is typically a "spectrally narrow band light source reduces the need for color filters (col.1, lines 23-24)" which would reduce the size or cost of the device.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the device of Lee to use a laser as a light source as taught by Weber to reduce the cost or size of Lee's device.

Claim 15 are rejected under 35 U.S.C. 103(a) as being obvious over Mazda (6,636,274) in view of Nagasawa (7,133,078).

With respect to claim 15, Mazda discloses the two-dimensional image forming apparatus as defined in Claim 11, but does not disclose wherein the branching part is a half mirror.

Nagasawa discloses a two-dimensional image forming apparatus wherein the branching part (5) is a half mirror (col.3, lines 30-35).

It would obvious at the time of invention to one of ordinary skill in the art to use Nagasawa's half mirror in stead of Mazda's prism to reduce the material of the branching part.

Claim 16 is rejected under 35 U.S.C. 103(a) as being obvious over Mazda (6,636,274) in view of Weber (6,364,487).

With respect to 16, Mazda discloses the two-dimensional image forming apparatus as defined in Claim 9, but does not disclose wherein the light source is an LED.

Weber discloses a two dimension image forming apparatus (co1.1, lines 20-26) wherein the light source is a Led (lines 23-24). Weber further discloses that an LED is typically a "spectrally narrow band light source reduces the need for color filters (co1.1, lines 23-24)" which would reduce the size or cost of the device.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the device of Uchiyama to use a LED as a light source as taught by Weber to reduce the cost or size of Mazda's device.

Claims 19 is rejected under 35 U.S.C. 103(a) as being obvious over Lee (5, 632,546) in view Uchiyama (5,851,060) and Okuyama (6,805,452).

With respect to claim 19, Lee in view of Uchiyama does not disclose wherein a fly eye lens is located on a path of light emitted from the light source, so that light that has passed the fly eye lens may be switched by the mirror.

Okuyama discloses (fig.1; 4 and 5) the use of a fly eye lens.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the projection system of Lee in view of Uchiyama with a fly eye lens so that light that has passed the fly eye lens may be switched by the mirror to improve the uniformity of the light emitted from the light source.

Response to Arguments

Applicant's arguments with respect to claims 1, 4, 6, 7, and 9-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JERRY BROOKS whose telephone number is (571)270-5711. The examiner can normally be reached on Monday-Friday, 9 a.m.- 5 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JERRY BROOKS/
Examiner, Art Unit 2878

/Que T. Le/
Primary Examiner, Art Unit 2878